Information Communication Technology,

Cross-Cutting Benefits,

and an

Approach for Activity Integration

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I. EXECUTIVE SUMMARY

This report builds on the high level of information communication technology (ICT) work completed by SO teams at USAID/Rwanda. The purpose of the report is to address and discuss cohesive, consistent, and dynamic approaches for continued SO team utilization of ICT which can build on this very strong foundation. The report is a response to the request by USAID/RWANDA to:

1. facilitate two USAID/RWANDA Partners meetings on USAID ICT activities,
2. identify common challenges facing activities with ICT elements,
3. further review draft mission ICT strategy and identify ways to integrate mission ICT activities.

In response to this request Esther Muchiri, REDSO/ESA-FS/ICT, Josphat Wachira, REDSO/ESA-ICT, and Kelly Wong, Leland Initiative visited USAID/RWANDA in February 2003. Based on the two Partners meetings, discussion with SO Teams and Mission Senior Management, site visits to partners' programmes, and review of previous work, the following report was drafted.

Summary of Findings

Progress. We found impressive and significant ICT elements imbedded in many SO activities, enthusiastic partners keen to share benefits they have achieved, and a Mission eager to fully take advantage of the benefits information communication technology can deliver. Key enabling success factors such as Mission leadership and SO team willingness to deploy appropriate ICT were also evident.

Partner Meetings. The two Partner meetings revealed significant use of ICT. Seeing themselves as beneficiaries, Partners are avid contributors and keen to participate in further developing cohesive, consistent, and dynamic approaches for the utilization of ICT. One common theme is that each partner had achievements that could benefit other partners. Minutes from these meetings are located in Appendix A

Common challenges. Our review of common challenges facing ICT elements revealed the usual suspects, including lack of human resources and connectivity. At the same time, the need for senior level non-technical management and better planning were also identified. Given the commonality of the challenges, they provide possible opportunities for a cohesive mission approach to address them.

ICT strategy and integrating ICT activities. The team found that earlier work completed on Mission ICT Strategy had been well received. Building on these efforts we present possible steps for better integration within SO teams and among SO Teams on a Mission-wide level. These include steps for individual SO teams as well as for the Mission as a whole. One key finding is the need for a full-time Mission-based ICT coordinator to implement the ICT strategy.

II. BACKGROUND ON PREVIOUS WORK

USAID/Rwanda has benefited from broad-based program and technical assistance from the Leland Initiative. Since 1996-97 when Telecom liberalization and privatization began, Leland worked with the Mission, REDSO, and the Government of Rwanda (GoR) to improve access and reform monopolistic policies. Results were manifest in 1999 with the first alternative access to the Telecom monopoly, followed by privatization and some competition of certain value added services in 2000. By mid-2002 major private sector efforts have resulted in private sector participation in voice and data markets, albeit *infant markets*. At the same time, working with GoR, other Donors, the Mission and Leland supported the formation of the Rwanda Information Technology Agency.

These efforts have resulted in one of the most impressive ICT buildouts. This rapid progress has seen Rwanda move from less than 300 Internet users and limited mobile telephone access four years ago to more than 10,000 Internet users, several national data and voice networks, and more than 50 cyber cafes today. All along ICT has taken a lead or important role in several USAID projects including the COM.SYS and WOCCU, networks, the EDDI funded PEARL, NUR-UMD training and network development, and more recently EDDI-EGAT/IT collaboration on the KIE distance education centers, telecenters, regulatory support, and Electoral Commission.

Recent work to identify information and communication technology (ICT) efforts ongoing in Rwanda and in particular, those that directly support the mission's objectives has been completed in the year. These efforts have been able to identify a range of ongoing activities that promote the development of the telecommunications and Internet sectors in Rwanda, and the mechanism that the Mission can use to integrate ICTs in its programs. The following is a brief summary of this strategy development work. We found this to be useful material for the Mission in its effort to integrate ICT into a Mission ICT strategy for inclusion in the new ISP.[1]

1. *Rwanda: ICT Assessment Report – Recommendations to USAID: by DOT-COM Alliance and Leland Initiative, Dec. 2001.* A DOT-COM Alliance and Leland Initiative team conducted a broad based assessment of USAID/Rwanda's efforts to promote the development of the telecommunications and Internet sectors in Rwanda. The team looked at the current infrastructure, the efforts made by the GOR and other donors to bridge the "digital divide" to enable Rwanda to compete effectively in the global market. The team's assessment made recommendations with respect to legal and regulatory policy, Internet capacity and private sector participation, community access to ICT and end user applications for development, and ICT for educational institutions.

2. *USAID/Rwanda ICT Strategic Plan Assistance: Leland Initiative, August 2002*. This report provides an assessment of ongoing ICT activities under each SO, identifies opportunities and constraints, and finally provides recommendations for the way forward. The report is an invaluable resource for the Mission and should be used as a reference document for ongoing and future activities.

[1] To view these report click or visit www.cidcm.umd.edu/previous_work.htm .

3. *I-Team SOW: Leland Initiative, July 2002.* This document outlines the formation of USAID/Rwanda I-Team and the responsibilities of the I-Team, which are: i) enhancing awareness and coordination of ICT activities; ii) devising ways of capturing ICT results; iii) determining the most appropriate way of integrating ICTs in the proposed ISP; iv) developing Actions Plans for ICT activities; and v) reviewing the possibility of forming a private sector partnership.

4. *Draft ICT Strategy: Leland Initiative, July 2002.* The draft ICT strategy outlines first steps the Mission should consider to fully integrate ICTs into its programs, projects, and operations. In addition, it outlines mechanisms and resources that the Mission can access for assistance in support of ICT related activities.

5. *Dot.Com consultations, October 2002.* Dot.Com assistance with development of a work plan and results framework integrated with the existing intermediate results and strategic objectives of the Mission.

III. CURRENT ICT IN SUPPORT OF MISSION and SO TEAM OBJECTIVES

Serious integration of ICT into current SO Team programs reflects the value placed on ICT by SO teams and the Mission as a whole. In SO3 the WOCCU Rural Bank, ADAR, and PEARL projects each have important elements of ICT. In SO1 the MSD SYS.COM MINIJUST, National Election Commission database, and elements of the Parliament (ARD) efforts also have important roles for ICT.

Concretely, and as examples, the USAID partners noted the following specific uses of ICT that have supported Mission objectives:

1. In Rwanda ICT is being used to disseminate weekly commodity prices and market analyses via e-mail because it is the cheapest way to communicate (in Senegal this information is being transmitted on a point to multi-point basis via mobile telephones);
2. Discussions with the Public Prosecutor noted the cost of not having a centralized data-base that could keep track of defendants: the inability of one local jurisdiction to access information about a suspect (sometimes the same one) in another local jurisdiction;
3. The National University of Rwanda has gained electronic access to over 1,000 journals;
4. One partner noted that the marketing of high-quality Rwanda coffee would not be possible without e-mail and Internet access. This access was an import element that allowed a significant increase in the per pound price Rwandan growers can command, which in turn contributes to poverty reduction efforts;[2]

[2] This projects manager felt that sustainability of the result is significantly dependent on continued e-mail access to, for example, contact fair-price associations. Further, it was noted that additional ICT such as two-way radios and a personal computer for accounting could better coordinate product delivery to washing stations, an intricate and critical element of high quality coffee production.

5. More effective communication and records keeping for administration of rural banking and access to financial markets is made possible by ICT.

These and other USAID partners noted that ICT is invaluable to them, that ICT

- increased efficiency and productivity,
- punctuated transparency of processes;
- provided for a better bridge from past to future,
- supported national integration, and
- increased diffusion and accessibility of information.

These benefits greatly assisted in their development objectives.[3]

Table 1 on the following page reports SO teams ICT activities.

These examples illustrate the rich ICT environment in Rwanda and show how ICTs are supporting Mission and SO team objectives. The varied and significant efforts have now matured to a point where serious synergy and opportunities exist. Accomplishments and needs of one effort nicely compliment those of other projects.

For example, the MINIJUST COM.SYS does not have connectivity for its site in Gikongoro. At the same time the NUR-UMD partnership has a spare set of air-bridges that may provide the necessary link from Butare to Gikongoro. Linking the needs and capabilities of one can support the other. Likewise, at this time there are at least three regional and potentially nation wide area networks planned and funded by USAID: the MINIJUST COM.SYS network, the KIE teacher distance education network, and the WOCCU rural Bank network. In addition there are potential networks for the Electoral commission, the Dot.Org telecenters, the Rwanda Education Network, and District Health Officers.

These efforts have not been coordinated with respect to network build out, interconnection where appropriate, or policy-demand aggregation. One reason is that previous to this point the pay-off for coordination of investment did not warrant the effort.

Now that so many efforts have matured or are just about to mature, it is clear that proper coordination can increase the effectiveness of past, present, and future efforts. Full and

[3] Some things simply cannot be accomplished without ICT—e.g. broadcast emails, frequent international and regional communication. Other benefits can be calculated in terms of time saved, transportation costs saved by use of e-mail, increased opportunities by accessing web pages, better coordination with mobile telephones, transparency introduced by increased communication and increasing the number of people who communicate. Undoubtedly ICT can support HIV/AIDS prevention, strengthening of civil and political societies, poverty reduction, and other objectives. For example, in Rwanda use of radio and video tapes have been used in HIV/AIDS programs, video has been used by Internews in their ICTR/Gacaca Project, Internet and e-mail are being used by NUR, KIE, KIST, and a myriad of others in support of their missions.

systematic integration of Information Communication Technologies in support of other methods used to realize strategic objectives as a whole will result in more effective programming.

Table 1: SO ICT Activities
Source: Aug 2002 USAID/Rwanda ICT Strategic Plan

SO1	SO2	SO3
1. Design and deploy a data and communications system SYS.COM, including VOIP, for the Ministry of Justice that will facilitate Gacaca's capacity to render justice more effectively and efficiently for over 100,000 alleged perpetrators of the genocide. 2. Strengthen the ICT capacity of the Electoral Commission (EC) including design, development, of a voter list database, web-based interface for the database to enable data entry, verification and validation of data; and provision of PDAs for collecting, validating and updating voter registration data. 3. Establish six multi-purpose telecenters in marginalized communities in rural areas through private sector partnerships. 4. Support distance learning program for teachers through the Kigali Institute of Education (KIE), including 4 remote centers (WAN and LAN) at KIE. 5. Provision of a total of 3,000 pieces of computer equipment to 2,200 Primary Schools in Rwanda. 6.. Launch a Community Radio Station in Kibungo. The licensing process is at an advanced stage. 7. Establish a computer center at the National University of Rwanda (NUR). 8. Supporting distance education, computer science and conflict management activities at the NUR.	1. Support a Masters of Public Health, Distance Learning Program for District Health Officers at National University of Rwanda. 2. Potentially utilizeICTs to support District Health Offices under the health decentralization program.	1. Phase I to establish a Telecom and Multi-Sector Regulator. 2. Provide Internet connectivity for Institute des Science Agronomics du Rwanda (ISAR) and use of ICT in support of delivery and curriculum reform for agriculture courses. 3. Use of ICT to support high-priced premium coffee production 4. Provide value added marketing information services for producers of passion fruit, coffee and pyrethrum. 5. Support of Farmer Outreach Services, under the Agribusiness Development Assistance in Rwanda (ADAR) and cyber cafes for farmers in communities to conduct market research and commodity price data dissemination. 6. World Council of Credit Unions (WOCCU) and the International Executive Service Corps (IESC) implementation of micro-credit activities, including rural network.

Building on ongoing and future work initiated by SO teams and special efforts by EDDI, Leland, and Dot.Com, as well as systematically integrating ICT components, will enhance achievement of SOs and IRs.

IV. ISSUES AND DIRECTION

Several sets of issues and directions were raised or came to light. These are presented below. We begin with a discussion on common challenges for implementing ICT project elements and then turn to SO and Mission perspectives on increasing the cohesion, consistency, and dynamism of ICT supported development.

Common Challenges

USAID Partners with ICT project-elements noted several common challenges. The full list is reported in Appendix A. These challenges represent good focal points for integration of mission ICT activities given their commonality. By addressing common challenges each SO and the mission as a whole can further cohesion and consistency of ICT utilization. Partners discussed the following challenges:

Human resources. Discussion of lack of human resources focused on the need for better planning for human resource needs, shortages of systems administrators, technical maintenance, senior ICT managers, and end-users. Participants suggested that continuing training/education for technical staffs at all levels and better assessment on training needs are needed. Better planning for the recruitment, placement, and retention of technical staff, as well as more realistic setting of salaries were identified as important common elements. While training opportunities were noted, some partners thought better use of local training resources could be realized. More broadly, people also felt a need for increased public awareness of ICT usefulness and web utilization and development skills, as well as greater involvement of women and a better gender balance. Better planning for the recruitment, placement, retention of technical staff as well as more realistic setting of salaries are needed.

Connectivity. Issues of connectivity are clearly ones that have cross-cutting benefits and challenges. Here items such as international bandwidth, quality of leased & ISDN lines, quality of telephone lines for data (especially in rural areas), shortage of telephone lines, monopoly for national coverage of data access, and lack of effective regulatory authority issues are all challenges that can be better addressed with a cohesive and consistent strategy.

Access. Access was differentiated from Connectivity by workshop participants to emphasize challenges of accessing existing infrastructure. Here participants noted that the cost of connectivity, LANS and WANS, training, electricity, computers, and taxes and tariffs limited access and stratified those who had access. In addition, the lack of or unreliability of electricity, LANS, WANS, and computer peripherals (printers, software, printing paper) negatively impacted use of ICT. These issues matched with general unawareness of the value of ICT and low income levels, compound the overall problem of access to existing facilities.

ICT Plans. Lack of cohesive planning was also seen as a challenge. Here participants talked about the need for coordination of ICT plans at national, local, donor, and project levels, and the need for these plans to be better more aware of challenges and realistic solutions to these challenges. The group supported better coordination between the National ICT plan and ICT activities. At the same time, they also thought the National ICT Vision and its implementation could be and needed to be more clearly articulated. Some participants thought that if more of an emphasis was placed on National stakeholders and implementers drafting and planning project needs, and if more support could be provided for host-Ministry capabilities to implement and manage sustainable large-scale projects, planning capabilities would increase as well.

Content. With respect to content, participants felt that content exists but is inaccessible or underdeveloped due to lack of the items noted above.

The SO perspective: Integrating ICT activities and accruing spill-over benefits

This section discusses potential steps, areas, and processes where ongoing and planned SO ICT activities can generate spill-over benefits. Careful consideration of the discussion will contribute to better ICT integration within SO and the mission as a whole. Active participation of an ICT coordinator will be key. The incumbent will need to work closely with SO teams and backstop their ICT needs to take advantage of one of the great benefits of ICT: many benefits are fungible and while derived from one area can be applied to other areas.

Impressive progress has been made by the Mission. The *Aug. 2002 USAID/Rwanda ICT Strategic Plan* characterized SO1 as having "fully embraced ICTs in the implementation of their activities," SO2 as being "in the process of integrating ICTs in its program" and "receptive to suggestions of increasing ICT use in the program," and SO3 having "embraced ICT as a tool that is being used to achieve its I.R. Increased Ability of Farmers to Respond to and Benefit from Market Demand and the sub-I.R.s."

It is clear from this analysis, the enumeration of Mission SO ICT activities reported in Table 1, and discussions with SO Teams and Partners in February 2003 that ICT is well integrated into Mission activities. Given the high level of activities several next steps can be considered to optimize spill-over benefits. The points 1 and 2 below are essentially process-based results for SO teams to consider. Point 3 addresses specific activities that SO teams should focus on as areas from which their team can gain spill-over benefits.

1. Within each SO, SOs teams should:
    a. Continue to build ICT into their activities wherever information or communication is an element;
    b. Identify add-on ICT activities that compliment other assistance;
    c. Identify ICT activities that can be funded by the various initiatives such as Leland and EDDI;
    d. Identify ICT activities that another SO is supporting for spill over benefits for their own SO.

2. Recognize ICT in SOs, IRs or sub-IRs and continue to build an ICT results framework on a formal or informal basis. This will assist with systematic integration and coordination of ICT activities within and among SO teams and support a more broad-based Mission ICT vision mission. Recognizing ICT IRs or sub-IRs will also assist with opportunities for special EDDI and Leland type activities and cross-cutting activities that support all the SOs.

3. The fungible value-added nature of ICT provides for significant cross-cutting benefits. The following kinds of activities frequently supported by SOs illustrate potential program elements targeted at one specific SO Team's objectives that have cross-cutting and spill-over benefits for other SO Team objectives. SO teams should identify ICT activities for themselves and other SOs that have spill-over benefits and flag them as a cross-cutting theme.

   SO Teams with the assistance of an ICT Coordinator should facilitate Partner participation in the following activities:

   a. **Training**. Lack of human resources has been identified as a major obstacle to development and a challenge for enhanced SO and Mission objectives. ICT training activities are in many cases equally applicable across SO Teams. SO Teams should work with each other and partners to share and coordinate ICT related training. This will increase the impact of the training. The ICT coordinator should take the lead to insure maximum impact of all ICT training activities.
   b. **ICT assessment for partners and Workshops**. Identify the immediate, mid-term and long-term ICT needs for the partners. SO Teams should carry out an ICT assessment every three years by ICT and development experts. The principal aim of such an exercise is to assist partners to realize their ICT needs and to use the deliverable report to seek donor funds. REDSO's SO6 carried this out last year and the exercise proved very useful. REDSO would be happy to assist as it can.
   c. **Local Area Networks**. Enhancing LAN diffusion and increasing the size of network capabilities among partners and stakeholders will yield increasing proportional benefits for all SOs. For example, LANs in the COM.SYS network can just as easily support commodity price data and rural health office data transfers. When supported in one SO LAN development should be coordinated with network build-out and end-user training of other SOs.
   d. **Connection to the Internet**. The ICT infrastructure in Rwanda can provide most partners with some access to the Internet. SOs Teams should, working with an ICT coordinator, further examine ways to aggregate demands. This will decrease costs, increase quality of service, and further support spill-over benefits.
   e. **Software and non-computer equipment**. These enable partners to make full use of ICTs as a tool for information exchange. The mission may need to upgrade partner software from time to time to match its software and format requirement.

The Partners may also need non-computer equipment such as digital cameras and LCD equipment which support their efforts and enable them to collect and present their data more conveniently.

f. **Special Initiative activities** (Leland & EDDI). SOs working with the ICT coordinator need to identify special initiatives, how they fit into the overall SO framework, and how to proceed with them. The success, and especially marginal impact increase, of various projects can be partially dependant on these special initiatives.[4] The mission should continue the liaison with LELAND and EDDI for these standalone activities to ensure that new ones are put in place and the old ones are used and maintained.

The Mission perspective: Broadbased ICT strategy

A broad based Mission ICT strategy will need to articulate a vision and objectives consistent with SO ICT activities. This vision and objectives can be, for example, organized into equipment, training and applications and will involve organizing optimization of spill-over and cross-cutting benefits. Partners suggested several possible objectives for consideration in the articulation and implementing of Mission-wide ICT strategy. Again the role of the ICT coordinator will be key. Together with the ICT coordinator, the SO teams and the Mission should:

1. Have a specific ICT components that are fully defined to avoid the danger of reduced attention to more general SO/IR.
2. Have projects that articulate ICT component(s). This will facilitate establishing coordination needs and capabilities across SOs.
3. Coordinate efforts and basic information exchange about existing activity, capabilities, needs, and challenges. This is especially important with respect to connectivity needs.
4. Use ICT to assist in progression from an idea to implementation.
5. Identify where SO ICT components fall within the Rwanda National ICT Plan.
6. Support National coordination mechanisms (RITA, ISP association, PC association).
7. Establish, articulate and define ICT needs in each SO.
8. Support an effective national network.
9. Continue support and extension for already established ICT activities.
10. Increase coordination of ICT needs and capabilities.
11. Make use of ICT to support organization's mission.

The enviable ICT situation provides opportunities to benefit from cross-cutting and spill-over dynamics. Taking advantage of this tremendous progress requires more close coordination between and among SOs and partners. Achievements in one project have not yet taken full

[4] For example the long-standing Leland SO1 creation of an enabling ICT policy environment has spilled-over and supported inclusion of ICT into USAID/Rwanda SO3's PEARL projects. According to the PEARL COP, ICT was not part of the original project.

[6] For example, MSD MOJ, Dot.Com telecenter and Electoral Commission, Dot.Edu KIE distance education centers each have connectivity needs. Each project has needs for national/regional backbone. Yet, there is little coordination among them to share common infrastructure, lobby for an enabling policy framework, or develop common efforts to address human resource shortages.

advantage of other projects. Currently many projects have just or are just about to "come on-line" and are approaching maturity. Some focus should be placed on taking advantages of the complimentary achievements. For example, linking the MINIJUST COM.SYS backbone network to the Electoral Commission, Telecenter, and distance education center, and linking NUR and KIST training capabilities to training needs in Parliament and elsewhere should be considered.

These opportunities arise from completed and ongoing work as well as the fungible value-added nature of ICT. Once initiated ICT can be used by many peoples for diverse uses. For example, a telecenter established to support farmers can likewise be used by teachers and health workers; a distance education center can be used by coffee cooperatives to contact fair-trade associations. This dynamic element of ICT requires flexibility to best take advantage of completed and planned activities. This in turn requires increased levels of coordination at both the planning and implementation phases.

Based on discussions with partners from each SO team and consultations with the Mission, it is apparent that the Mission needs to strengthen its ICT coordination. We feel that ICT coordination should be a full-time job in order to integrate the impressive work that has been completed and future ICT activities. This coordinator should be tasked with working with SOs to develop ICT applications in support of their self-defined objectives, working to develop specific objectives associated with SO IRs, facilitating coordination within and among SO teams, between the Mission and partners, and articulating and implementing SO ICT visions.

V. ICT COORDINATOR SCOPE OF WORK

The mission has chosen Information Communication Technologies as one of its cross-cutting activities to be managed by a coordinator who works closely with an I-team for the mission. Some of the challenges ahead of the ICT coordinator are:

1. Keep an inventory for all ICT activities initiated by the Mission for future reviews and reference before initiating new ones. Thus, take advantages of synergies where possible and also ensure a coordinated ICT development in Rwanda in general. The coordinator will plan the various projects with the intention of creating one ICT backbone in the country on which all projects will ride.

2. Identify suitable ICT activities for the various SOs and discuss them with the SOs. Such discussion could cover the following;

a. Why is the activity necessary? How will the SO benefit from it? What is the IR being addressed? What are the expected results? What are the possible indicators to measure the result? How will the results be measured and how often will they be reported?
b. Write Statements of Work that address such issues as the budget, acquisition methods, evaluation criterion, reporting, administration, sustainability etc.

c. Identification of low cost add-on ICT activities that the SOs could directly carry out. These could include training, creation of LANs and equipment drops that enhance the effectiveness of the mission assistance in other areas.
d. Identification of ICT activities that need to be built in future grants to partners.

3. Interact with other donor communities that are involved in ICT development in Rwanda to insure that the Mission effort compliments their efforts and does not introduce duplication. This will involve taking stock of ICT assistance partners are receiving from donors in order to identify gaps for possible future assistance.

4. Interact with the various community and Government of Rwanda ICT initiatives to insure that the mission comes up with activities that are likely to be popular and acceptable to both the community and the Government.

5. Be the CTO for the various ICT projects. Ensure strict adherence to the contract, make progress reports to the front office and the SOs, broadcast successes, and ensure that the Mission gets credit for its efforts. Monitor the development of ICTs among the various partners to ensure full advantage of synergy that exist among them. For example, partners with excess facilities and resources could be approached to help others. Also work with grantees, and promote implementation of ICT projects built in various grants.

6. Review completed projects from time to time to insure that they do not stall and that commitments made by various parties continue being honored.

7. The ICT coordinator should work with the Government of Rwanda, and in particular Rwandatel, to support the recently formed Regulatory Body. The coordinator should also coordinate with Leland and REDSO/ICT to identify areas from the Telecomm experts in COMESA that could benefit the new regulator.

APPENDIX A: PARTNERS' MEETINGS

Meeting Agenda

Review of ICT present projects/ICT separate projects

1. Training ICT experts (Mr. Albert Butare, Vice-rector KIST)
2. National Electoral Commission database (Mr. Fiacre Mutabaruka, NEC)
3. Internet cafés (Mr. Geoffrey Livingston, ADAR)
4. Ministry of Justice Computer System (Mr. Yvan Porcheron, MOJ)
5. Telecenters (Mr. Gerald Mpyisi)
6. Website design and training/electronic archives (Douglass P.Teschner, Ed.D., Chief of Party ARD/SUNY)
7. Rural and urban pilot banks' electronic networking (Adrian Rodriguez, WOCCU)
8. Commodity costs, market links information (Geoffrey Livingston, ADAR)

II. Challenges, solutions, and roles

1. What are specific problems affecting ICT and ICT based development activities in the following categories:
   a. Telephone lines and rates
   b. Electricity
   c. Human resources
   d. Funding
   e. others
2. What role can be or should be played by USAID to address these problems?
3. What role can be or should be played by the GOR and the donor community to address these problems?

III. Integrating ICT into SO activities

1. What is the ICT vision within your project?
2. What role should ICT play in development activities in Rwanda?

IV. ICT in Rwanda, big picture vs. incremental steps

1. GOR ICT vision
2. Donor coordination

Kigali Partners' Meeting

Challenges for ICT Projects

1. HUMAN RESOURCES NEEDS
   a. Management of Information Systems (Director)
   b. Long term Technical plan
      - Recruitment, placement, retention of tech & specialized staff
      - Salaries
   c. Senior Management Supervisory Capacity (non ICT- technical)
   d. End-user Trainers
   e. End Users applications and maintenance
   f. Continuing training/education for technical staffs at all levels
   g. Increase involvement of women/ gender balance
   h. Better assessment on training needs
   i. Better use of local training resource
   j. Increased public awareness of ICT usefulness
   k. Web development skills needed

2. CONNECTIVITY
   a. International Bandwidth
   b. Leased lines & ISDN not sufficient
   c. Quality of telephone lines for data especially rural
   d. Shortage of telephone lines
   e. Monopoly for national coverage of data access
   f. Regulatory authority issues

3. ACCESS
   a. Cost to access ICT (urban/rural divide)
   b. Cost to maintain connectivity
   c. Operational cost of LAN WAN maintenance
   d. VAT
   e. Awareness
   f. Training
   g. Low income level
   h. Electricity
      - fluctuations
      - none in some areas
      - outages
      - cost
   i. Cost of computers
   j. Lack of PC peripherals—printers, software for e.g..
   k. Unreliable LAN/WAN networking

4. ICT Plans
   a. Coordination of ICT plans at National, local, donor, and project levels

b. Plans need to be more well grounded in reality
c. Planning drafting needs to be done by National stakeholders and implementers
d. National ICT plan needs to direct donor ICT activities
e. Better National ICT Vision implementation
f. Lack of large-scale project implementation and project management sustainability within host Ministries

5. Content
a. Content exits but is inaccessible or under developed due to lack items noted above. Content includes:
    - Electoral commission data
    - Ministry of Justice data
    - Gacaca data
    - Bank Project
    - Conflict Management/analysis content
    - Distance Education

Utility of ICT for Development Efforts:

- More efficient and productivity
- More transparency of processes
- Increased access of information
- Better bridge from past to future
- Better national integration
- Increased diffusion of information

Possible Objectives for Cross-cutting SO

- All projects should have specific ICT component, and the specificity of the component in important. (Cross-cutting SO/IR needs to be specific due to danger of reduced attention more general SO/IR.)
- All projects should have an ICT component to establish coordination needs and capabilities across SOs.
- Coordinate efforts and basic information exchange about existing activity, capabilities, needs, and challenges. This is especially important with respect to connectivity needs.[6]
- Use of ICT to assist in progression from an idea to reality
- Identify where ICT component fall within National ICT Plan
- Support coordination mechanisms (RITA, ISP association, PC association)
- Establish ICT needs in each SO
- Support effective national network
- Continued support and extension for already established ICT activities, increased coordination among ICT needs and capabilities
- Use of ICT to support organization's mission

Meeting Minutes

Introductions

Director's comments

USAID doesn't have telecommunications sector. ICT serves as important role in USAID. In strategic plan for 2000 ICT is crosscutting activity, core of bringing about research. Leland initiative plays important role. ICT leads to sustainable development and connectivity for Africa.

Why ICT? During globalization, countries left on other side of digital divide will be left behind. ICT is tool for competitiveness. According to the vision for Rwandan government ICT will play a integral role for its future for competitiveness.

How is Rwandan going to be competitive? Education. If Rwandan is going to reach vision for 2020, the education will be at the base of the effort. USAID has taken the lead for this effort. With KIST, the university, World Bank, and other partners, there is a big push to educate Rwanda.

5 year strategy. Make ICT crosscutting theme throughout the portfolio. Learning a lot from each other's activities is goal of today's meeting. In WDC, for getting more money for Rwanda. Needs to show how these programs are working in Rwanda in order to get the money from USAID. Many problems arise, and would like to encourage to bring them to the attention to others so that these programs can improve. Good opportunity to talk about the successes and constraints of the programs. Find synergy of programs. Seek overall goals.

Thank you.

Presentations

Kelly—how to advance ICT agenda in Rwanda. This is information gathering and exercise to provide input for objectives for an integrative strategy.

<u>KIST Technical Training</u>

Objective: train technicians, computer science, and electronics

- Develop the population of Rwanda. Computer engineering information tech, trains young populations. Electronics and tc fields to train students.
- 3 areas: 4 month training, software,
- Secondary school teachers: who will be able to train other teachers and students.
- Australia thru distance learning training.

<u>Electoral Commission</u>

Objective: increase accuracy and efficiency of developing and tracking voter registration roles

- Database for election commission
- Data on paper down to cell and sectors.
- Design software adapted to this function. Available now.
- Typed and printed circulated for collection. Mistakes have been made thru this process. Inaccuracies of information thru this process. Looking for ways to improve this thru ICT.

MSD Ministry of Justice

Objective: Provide national backbone for Prosecutor's office

- objective--intro the com sys at 2003. justice and USAID.
- Not included is important: the supreme court and parliament. Democracy and governance in important, but only strengthening the executive.
- Kigali central office—40 users
- Many problems of infrastructure in the architecture.
- Approach—reduce operating costs. No VSATs. Want to facilitate maintenance. With other development projects (parliament, supreme), want to link as many sites as possible. Now most districts. Develop ministries resources.
- Nearly $1 mil invested.
- Packages-- #1 up and running, #2-2/3 finished, Nyamata is let go in package 3
- Basic services—slide
- Problems—slide
- Should develop maintenance backbone approach for governance and democracy. Other projects should be plugged in. reduction of poverty thru ICT.

Dot org Electoral Commission project.

Objective provide Electoral Commission with ICT to improve voter registration roles.

- Working with entrepreneurs.
- Using voter's database and updating the database. End of March completion. Canadian firm partnership.
- Enhance their capacity—12 computers per province. Data is entered at place of collection. Provide with printer. 4.3 million voter cards. Should have capacity to print own cards. Contributing to training of staff of commission to enable them to manage their own database. Provide PDAs which can be used to collect info at sector level, so they can be downloaded to server at commission.

Telecenters: Objective increase rural access

- give access to internet and info to the rural areas.
- Proposals have been sent out and now working with 3. Gitarama, Nyanza and ….
- Within 2 months will cooperate with telecenters.
- Although project started 3 yrs ago. Memo of understanding took too long. Updating the database (Dot.org involvement is more recent).
- Id-ed firm to do printing of cards.
- Submitted to USAID in request for funds.

ARD National Assembly Project:
Objective: over all support of NA, with ICT component

- designed to support national assembly. Budget analysis and modernize the processes there.
- In 18 months—2 assessments have been made. Data gathering important for planning. Library science tours, software. Hub and Internet café. Doubled their capacity. Training staff on use of the Internet. Big impact. Push email capacity. Improvement of website; public info for citizen participation. Plan for electronic archiving.
- Challenges: management and vision of goals. Speaker is committed, but lower management doesn't know about the project. Low staff levels. USAID needs to maintain these big systems. What kind of staff needs to be in place? Donors—who are donating? Needs to consider what is most efficient for them.
- Think big—big vision for what they can do. All computers are connected.
- Act small—incremental steps in the direction. Small projects that make a difference.

Rural and urban Bank Project (WOCCU):
Objective: Use ICT to support better banking, especially bookkeeping for dispersed bank branches

- 10,000 clients. Local banks can have up to $1 billion in deposits.
- Help banks with insufficient funds. Software to organize database. Needs all info for each client. Database created in Kigali will be ready in June. Problems—more banks can't afford the software. Telephone lines are expensive, connection needs to be permanent. If server is down, many problems arise. Maintenance is needed.
- Donor coordination is problem. National assembly under resourced. Better coordination of IT is needed.

Break—10:05am

Challenges, Solutions, Roles—10:15am

Human resources—

- One person in the ministry who is well trained. Drive it on the hardware basis, issues of expandability, and software issues. Person at the level of director. Plan for technical support over the long term.
- Not only technical managers, but traditional managers as well. Top managements who supervise the IT people.
- End users.
- Recruitment and salaries--People who are trained need to be placed in the right position as well as retention problems.
- Formal training programs—are they adequate? The private sector support the training of the individuals needed as technicians.
- Needed to decentralized technicians and skills. What is needed as far as IT skills are concerned? Training is mainly in networking skills, but other skills (applications training) are also needed.

- Within the design of the project, transparency of resources is needed in order to advance the government and donor activities.
- Ongoing training to learn new skills.
- Increase the involvement of women
- Training for skills applicable to what is used (needs assessment)

Connectivity

- MINJUST project is stretching the capacity of Rwanda. 128k maximum available, but 256k is needed as promised in previous contracts. Dial-up (ISDN) services is alternative, but not pure and adequate. Band width problems. Rwandatel is the only one that exists.
- Lack of competition—as long as Rwandatel and MTN are the only providers, problems will still persist. Privatization of Rwandatel. Lack of efficiency due to monopoly.

Cost/Access

- People in rural areas can't access these services
- Process of providing access to people who have the access. Attempt to bridge divide.
- Increase national budget, other donors
- Lack of competition—costs will go down when other companies arise.
- Awareness issue of access as well as training issue
- ICT for development, for people to use ICT, they must benefits. The issue is people in rural areas, do they need ICT? If ICT help address how to grow, find markets, and other tools. Otherwise, it renders useless. In Maraba, other people are using ICT to find out skills for agriculture. Good tool for welfare.
- Telephone rates
- Electricity, fluctuations, lack of, outages, and costs
- Cost of computers are high, should lower the costs. Assembling costs for computers in Rwanda can exceed the costs of buying from other countries.

IT planning

- Vision for every project, nationally, and USAID
- USAID levels should comply to national vision
- Coordination and implementation of plans
- They need to be feasible and driven by people in ministries.
- Issues should be decided by Rwandans rather than by consultants
- There can be some failure rate for ministries to implement their part of the plans, weakness in relying on them to do it.
- All parts are in place, but the action is needed for each ministry
- Achieve a common infrastructure and government network for the ICT plan

Legal and Regulatory issues

- Lack of competition

Integrating ICT Into So Activities—12:20pm

What are the objectives for each project?

a. Trying to create more transparency and government info for people as role of good governance. Efficiency and productivity increase. Increase ways for people to communication.

b. Increase efficiency of MINJUST. Continuity and sustainability. Projects that go towards judicial, and legislative, create balance of powers. Hardware and software but has only touched on hardware, b/c of unseen difficulties.

c. Dot-org. Provide access to rural people at a usable cost. Poverty reduction.

d. Gacaca. Software for collecting the data on the cellule level. Broadening work to district level. Can it be done with other ministries? Assist in figuring out perpetrators of many areas.

How should the mission proceed?

a. All projects should have an explicit IT component
    - Should be within the objectives, and avoid making IT cross-cutting
b. Needs assessments of training
c. Support/coordinate different bodies
    - So that things are not duplicated
    - Equipment and resource sharing
d. Getting ideas to work
e. Advise the projects
f. Important for USAID to know how the projects fit into the national priorities
g. Define ICT broadly
h. Follow up on the governments plans
i. Develop a regular ICT group/body/society—as one created by the private companies

END OF MEETING—1pm

Partner Meeting at Butare – National University Of Rwanda

Introductions:

1. Kelly Wong, Leland Initiative, USAID/W
2. Josphat Wachira, REDSO/ICT Specialist
3. Esther Muchiri, REDSO/FS ICT Specialist
4. John Yaramba, ICT Coordinator, USAID/Rwanda
5. Mr. Innocent Mugisha, Faculty of Education and Head of Distance Education Department. (Present on behalf of the Director of Distance Education)
6. Mr. Magnus: Meeting Facilitator – Office of the Director
7. Mr. Charles Gasaraci, Director, Center for Conflict Management
8. Ms. Sifa Murora, Assistant Coordinator – partnership with University of Maryland

Agenda:

1) Review of ongoing ICT projects:
    a. Computer Science Education (Albert Nsengiyumva)
    b. Distance Education, challenges, benefits (Dr. Emile Rwamasirabo)
    c. Research on conflict management

2) Challenges, solutions and roles

3) Integrating ICT into SO activities

4) ICTs in Rwanda, big picture vs. incremental steps

The Computer Science Center has been around since 1999 and is a UNDP funded project responding to genocide crisis. Its aim is to try and comprehend the process that led to the genocide and the conflicts that revolve around. The center is now in the process of being integrated into the University structure as a fully-fledged center of university.

The structure:

- Steering committee (reps from various faculties)
- Committee of Sponsors (includes EU, UNDP, Nat unity and reconciliation commission etc): supposed to help raise research funds;
- Center council: director, deputy director
- There are 5 research units dealing with Rwandese Conflict & existing strategy, regional conflicts, intervention and strategies of conflict management; socio-economic dimension of conflict; justice, gender and human rights. These units will be the source of research projects.
- The Center has an ambitious Research agenda on election studies, democratic transition in post-conflict Rwanda, total of 21 such themes. Have not managed to secure funds for all, still looking.
- Conducts training activities e.g. train police cadets in conflict management, women/youth groups.

- The center has published research findings in form of small booklets, currently in the 8th publication. Intends to continue with program and to negotiate with institutions for co-publishing their work, which will help in better dissemination and meeting the costs.
- They hold conference and workshop in a variety of conflict subjects. They have 8 upcoming workshops on methodology for research planned.
- Have a small info & documentation unit that has been coding local newspapers articles, monitoring GACACA, keeping and recording info, disseminates info by newsletters; speakers series i.e. invite important guest speakers to speak on conflict management issues.

Staffing:

Capacity has been small, increasing with time. They now have 4 Phd holders in research staff, colleagues soon to pursue Phd studies. They hope to be stronger than before. Manpower problems have hindered their progress. Intend to network more with other stakeholders especially the national commissions active in the country. This is an election year, talking to Electoral Commission to talk to political parties on how to conduct themselves, election monitors; conduct seminar for media people. Hoping this will make tangible impact.

Distance Education:

Talking about Distance Education at the institutional level in line with university vision/mission.

- There is a proposal of consolidating all units of Distance Education under one umbrella – proposal at an advanced stage. Hope this will take care of all ICT requirements, as well as receive courses from outside. The projection of the university is 10,000 students by year 2005.
- The traditional way of teaching using the existing infrastructure can't cope with the student demand. They are using multimedia presentations for class teaching because of the increase of students in a lecturer room. This is a good use of ICTs. Need to improve teaching/learning methodology – and sees ICT as a gateway to encourage more discussion between students. Current statistics is 1 computer to 50 students, from the mini-education center that does not have enough computers.
- Teaching staff had training in computer technology in order to teach undergrads IT courses. University of South Africa visited NUR and could start providing online courses.
- Access for research purposes is very important. Need to take advantage of ICT policy at the national level.
- Existence of such centers in the provinces helps the university access materials on the web from all the different provinces. E.g. ICTs can help the university disseminate HIV/AIDS related-info widely not only via print materials, but on also on the web, CD, diskettes and visual presentation.
- Designing a 3-module course for teaching staff with computer-phobia so that they can offer better quality education services.

Newsletter:

Ms. Beth Mutamba is the Newsletter producer/website contact person. The 12-page Newsletter is produced at the center. The 50 copies produced are not enough but they have limited resources. Target group is the university community, researchers, and visitors. They have plans to post the Newsletter and all research materials on their website (www.ccmrwanda.org) which is funded by USAID and developed by an outside contractor. There are issues with the website which USAID is aware of. Requested a report from the developer who said website is finished, CCM confirmed it was finalized. Beth: insists that CCM did not agree on the finalization of the website. (check out www.amaniafrica.org). Scanner, printer, DreamWeaver software procured.

Challenges, solutions, and roles

Problems:

a. *Equipment:* Need not just PCs but printing equipment and enhanced LAN. Review the current LAN system and get printers that are network enabled or a PC that can be used to channel print jobs to a printer. Cost of printing (toners, papers etc) an issue.
b. Different donors have given different brands of computers/equipment that are not compatible. Get an inventory of equipment in the campus. Get bandwidth management software to help the speed issue. They need more bandwidth, but there is need to monitor usage that can tell who is using what when
c. *Computer usage*: Ratios is 1:53 computer/student access. Not enough.
d. *Need sample ICT policies and regulations*. Need to learn from other universities – how they're doing it.
e. *Access:* ISDN links have only one line, if want more, then expensive. They also have VSAT access.
f. *The biggest IT problem* is Internet access as the VSATs link provided by Leland was hit by lightening thus no access. They do not have email management software and need to establish a university email account. It is important to document problems with the Internet link. Leave this issue to Kelly to resolve.
g. *Use of other IT technologies, e.g. cell phones, PDAs, etc.:* So far, work is academic and revolves around the campus; they have Laptops (notebooks) that researchers use when they go out. They need additional Multi-media projectors; cordless microphones for lecturers (they have lecture room that hold 200 students thus cannot be heard); digital cameras.
h. Need to link up with other civil society organizations especially on the web where they can have space on the CCM website and they post materials there.
i. Electricity is not such a problem
j. Communication between the 3 campuses have been wireless, but has been problematic. Trying to solve the problem by installing fiber optics (wireless affected by lightening).
k. *Students use of IT*: Everyone needs to be encouraged to use IT and helped to differentiate between IT and computers. For example, the Instructional

Technology course – students think this is computer related which is not the case. There is need for awareness creation.

l. Institutions are calling their IT course different names, which is a clear indication that they do not understand what IT is all about. Need to tie IT with objectives. Stop taking IT as a separate, stand-alone thing – make it integral.
m. *CCM:* need data analysis software especially to analyze data collected from a national survey like the proposed political culture survey. To get info from GACACA, they send people to listen and capture the information. Plans to capture the information into a searchable database. They have a library software that can be web-based. There is a national plan to create a mega project to collect GACACA document. CCM only focusing in one district.
n. There are not enough curriculum developers in the NUR. Need to help lecturers understand why they are teaching what they teach, and then show them the available ICTs to use in teaching. NUR has been visiting other universities to see how they work.

The team commended the university for the great achievements they have made in ICTs especially the breakthrough with the modules for introducing IT to lecturers.